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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/302,409	04/30/1999	DENNIS J. O. SHAUGNESSY	1375A1	6842

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PPG INDUSTRIES INC  
INTELLECTUAL PROPERTY DEPT  
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EXAMINER

MCNEIL, JENNIFER C

ART UNIT	PAPER NUMBER
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1775

DATE MAILED: 04/09/2003

21

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application N .

09/302,409

Applicant(s)

SHAUGNESSY ET AL.

Examiner

Jennifer McNeil

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 21 January 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 4-36 and 38-50 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 4-36 and 38-50 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

## DETAILED ACTION

### *Claim Rejections - 35 USC § 112*

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 40 and 42 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claims 40 and 42 each refer to the first dielectric film of the first dielectric layer being the first film of an oxide of an alloy of zinc and tin. However, each depends from a claim (15 and 17, respectively) that refers to another film being defined as a first film of an oxide of an alloy of zinc and tin. Please clarify.

### *Claim Rejections - 35 USC § 102*

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 25, 28, and 31 are rejected under 35 U.S.C. 102(b) as being anticipated by Depauw et al (GB 2311540A). Depauw et al teach a coated sheet for use in a laminated assembly including a transparent substrate carrying two metal layers formed of silver and three layers of a transparent dielectric material. The dielectric material includes oxides such as tin oxide, zinc oxide, silicon nitride, or a mixture thereof, or a complex of zinc stannate. Each dielectric layer can include more than one of these materials and each layer can be a composite layer formed of successive subsidiary layers of different compositions. A combination of tin oxide and zinc oxide is generally advantageous, whether in an

admixture or in successive sub-layers. The coated substrate also has a thin layer of a sacrificial metal, such as titanium, provided above and in contact with each metal (silver) layer. Table A shows the successive layers (films) which may be used in forming the dielectric layers of the laminate. Claim 25 simply required that the second dielectric layer comprise a first film of an oxide of an alloy of zinc and tin and a second dielectric film of a different composition. It is clearly taught by Depauw that a combination of tin oxide and zinc oxide is advantageous and that multiple films are used in each dielectric layer. On page 7, Depauw states that each layer can include more than one material and each layer can be a composite of successive layers (films) of *different* composition from each other. Therefore it is clearly taught by Depauw that the layers may comprise multiple films of different compositions and that a combination of tin oxide and zinc oxide is advantageous as an admixture in a film.

#### *Claim Rejections - 35 USC § 103*

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 4-24, 26, 27, 29, 30, 32-36, and 38-50 are rejected under 35 U.S.C. 103(a) as being unpatentable over Depauw et al (GB 2311540) in view of Gillery (US 4,610,771). Depauw teaches a coating for a transparent substrate as discussed above, including multiple films as taught on page 7, lines 16-23. Depauw does not teach specific contents of the zinc oxide/tin oxide layers. Gillery teaches films of metal alloy oxides for use in antireflection film in combination with metallic films such as silver. Gillery teaches that the film may be zinc and tin oxide wherein the zinc is present at about 10-90% and the remainder is tin. Gillery teaches that this provides maximal transmittance of the coated product. Absent a showing of unexpected results, it would have been obvious to one of ordinary skill in the art at

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the time of the invention to use a zinc and tin oxide layer having the composition taught by Gillery in the coating of Depauw to provide a coating with improved transmittance. Furthermore, because Depauw teaches that multiple films may be used in each dielectric layer, absent a showing of unexpected results, it would have been obvious to one of ordinary skill to apply the layers in the form of multiple films.

Depauw also teaches that these panels are useful for windshields in vehicles (page 8, lines 29-31).

### *Response to Arguments*

Applicant's amendments have overcome the 112(2) rejections of the previous office action.

The reference of DePauw is considered to apply to the claims as discussed above. Claims 25, 28, and 31 do not require that one layer have certain amounts of tin and zinc. In each claim, these limitations are optional. As stated above, Depauw clearly teaches combinations of zinc oxide and tin oxide, or zinc stannate (oxide of an alloy of tin and zinc) as coatings for transparent substrates, and having metal primer layers and silver infrared reflective layers. The remaining claims introduce these films in differing order of dielectric layers. Whether the zinc oxide/tin oxide film is present in the first, second, or third dielectric layer is considered an obvious variant in light of the teaching of Depauw in view of the ranges taught by Gillery.

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*Conclusion*

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jennifer McNeil whose telephone number is 703-305-0553. The examiner can normally be reached on Monday through Friday, 9:30AM-6:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Deborah Jones can be reached on 703-308-3822. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9310 for regular communications and 703-872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0661.



JCM  
April 5, 2003

Jennifer McNeil  
Examiner  
Art Unit 1775



DEBORAH JONES  
SUPERVISOR PATENT EXAMINER